

Genetic Model Involving Alkali Magmatic Activities and Metallogenesis of Indo-Chinese epoch in Xionger Fault Basin, China

REN, FUGEN., LI, SHUANG BAO., DING, SHI YING., CHEN, ZHIHONG., ZHAO, JIANONG AND WU, BIN Tianjin Institute of Geology and Mineral Resources, Chinese Academy of Geological Science, Tianjin, China

Indo-Chinese epoch movement was a great turning point in earth's crustal tectonic development. The magmatic activities and metallogenesis accompanied it also had a important significance. The Xionger Fault Basin located in the south part of North China Massif, near the Qinling Orogenic Belt to the south. During the last phase of middle Triassic Period, the North China Massif collided and sutured to the Yangzi Massif and the Qinling Orogenic Belt as a micromassif between the two Massif subducted toward to the North China Massif to the north deep to the mantle level along the Shang-Dan Fault causing upwelling of mantle materials and inducing remelt of crustal materials at different degrees, thus resulting in alkalic magmas of mantle-crust mixed type that invaded along the tension deep fractures which occurred under compressional lag faulting inversion conditions. These magmas are emplaced striked E-W on both W and E sides of Qingling Old Ridge (within Xionger Fault Basin). For example, Huayang chuan carbonatite complex in the west side, Shaanxi Province (Re-Os isochron for molybdenite gives 221 Ma) and Songxian syenite, in the east side Henan Province (The single zircon U-Pb method for syenite dates 208.5 Ma) Being separated by the Qinling Old Ridge and different mixed melting degrees of mantle-crust materials, the two alkalic rock zones appear different mineralization environments. The Huayangchuan district was produced directly in Mo-Pb deposits of carbonatite type, while on the east side, Au and Pb mineralization were developed.

Acknowledgements: this paper is a product supported by the project 49772177 of National Natural Science Foundation of China (NSFC).